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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/678,580	10/03/2000	Daniel A. Japuntich	48317USA7K.030	7366

7590 05/09/2002

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EXAMINER

LEWIS, AARON J

ART UNIT	PAPER NUMBER
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3761

DATE MAILED: 05/09/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.  
**09/678,580**

Applicant(s)  
**DANIEL A. JAPUNTICH ET AL.**

Examiner  
**AARON J. LEWIS**

Art Unit  
**3761**



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE THREE MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Mar 4, 2002
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 33-58 and 60-67 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 33-58 and 60-67 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

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## **DETAILED ACTION**

### ***Response to Amendment***

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action during an Interview on 04/05/2002 is persuasive and, therefore, the finality of that action is withdrawn. The amendment filed 03/04/2002 has been entered.

### ***Double Patenting***

2. Claims 33-58,60-67 of this application conflict with claims 34-77 of Application No. 08/240,877; 34-77 of 09/440,619; 33-71 of 09/678,579; 33-54,56-61 of 09/678,488; 33-54,56 of 09/677,637; 33-36,38-62,64-66 of 09/677,636. 37 CFR 1.78(b) provides that when two or more applications filed by the same applicant contain conflicting claims, elimination of such claims from all but one application may be required in the absence of good and sufficient reason for their retention during pendency in more than one application. Applicant is required to either cancel the conflicting claims from all but one application or maintain a clear line of demarcation between the applications. See MPEP § 822.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. Claims 33-36,50-56,58,60-67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simpson et al.('516) in view of Shindel ('277).

As to claim 33, Simpson et al. disclose a filtering face mask that comprises: a mask body (1,2) that is adapted to fit over the nose and mouth of a wearer (fig.1); and an exhalation valve (fig.2) that is attached to the mask body, the exhalation valve comprising: a valve seat that comprises: a seal surface; an orifice (16) that is circumscribed by the seal surface; and a flap-retaining surface (portion abutting retainer 17); and a single flap (15) that has a stationary portion and only one free portion and first and second opposing ends (fig.2), the first end of the single flexible flap being associated with the stationary portion of the flap so as to remain at rest during an exhalation, and the second end being associated with the free portion of the flexible flap so as to be lifted away from the seal surface during an exhalation, the second end also being located below the first end when the filtering face mask is worn on a person, the flexible flap being positioned on the valve seat such that the flap is pressed towards the seal surface in an abutting relationship therewith when a fluid is not passing through the orifice (page 2, lines 37-50).

The difference between Simpson et al. and claim 33 is a valve cover that is disposed over the valve seat and that comprises a surface that mechanically holds the flexible flap against the flap-retaining surface.

Shindel (col.2, lines 59-66) teaches a valve securing device in the form of a valve cover (7) that is disposed over the valve seat and that comprises a surface (14) that mechanically holds flexible flap (6) against the flap retaining surface (5). Shindel cites the advantages of simplicity of

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arrangement and ready removability of the cover when desired which would allow for replacement and/or cleaning of the valve and orifices.

It would have been obvious to modify the manner of attachment of the exhalation valve of Simpson et al. to employ a cover over the valve seat because it would have provided a simple arrangement with ready removability of the cover when desired and because it would have provided protection for the exhalation valve as taught by Shindel.

As to claims 34 and 35, the particular material from which the valve seat of Simpson et al. is made and the manner of making the valve seat can be arrived at through mere routine obvious experimentation and observation with no criticality seen in any particular material including plastic material. It is noted that Simpson et al. (page 2, line 39) discloses the valve flap being made from a plastic material. Consequently, it is submitted that it would have been obvious to make the valve seat from any well known material (e.g. plastic) having known physical characteristics to achieve an expected result (i.e. physical cooperation of like plastic materials).

As to claim 36, the seal (fig.2) of Simpson et al. is illustrated as being substantially uniform and since the flexible flap (15) of Simpson et al. is disclosed as being made from plastic and since known physical characteristics of plastics include flexibility and resiliency, it would have been obvious that the flap (15) of Simpson et al. being made from plastic is "...capable of allowing the flap to display bias towards the seal surface."

As to claim 50, while Simpson et al. is silent as to the relative surface areas of the fixed and free portions of flap (15), it is submitted that the particular relative amounts of the fixed and free

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portions can be arrived at through mere routine obvious experimentation and observation with no criticality seen in any particular relative amounts.

As to claim 51, the flange against which the flap is secured in Simpson et al. (fig.2) is illustrated as being the same 360 degrees around the valve seat.

As to claim 52, given the downward orientation of the mask body (1,2) of Simpson et al. (fig.1) and given that any exhaled air must pass outward between the valve flap (15) and the body of the mask, it stands to reason that exhaled air will follow a path which is generally parallel to the upper surface of the body of the mask which itself is downwardly oriented as illustrated in fig.1. Therefore, exhaled air is deflected downwardly during use of the mask of Simpson et al..

As to claim 53, the mask body of Simpson et al. is cup shaped and includes at least one shaping layer and a filtration layer (page 1, lines 108-123). Simpson et al. (page 1, line 116) disclose that the shaping layer may be located on one or both sides of the filtration layer. One or both sides would include being located outside of the filtration layer.

As to claims 54-56, while Simpson et al. do not address the particular volume of a wearer's exhalation exiting the exhalation valve (12), it is submitted that since the exhalation valve (12) is expressly disclosed as opening in response to a wearer's exhalation, it would have been obvious that the valve would remain opened as long as a wearer is exhaling which would enable most if not all of the volume including 60-73% of gas exhaled by a wearer to pass through valve (12) of Simpson et al..

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As to claim 58, since the mask body (1,2) of Simpson et al. is angled downwardly when positioned on a wearer's face, the valve (fig.2) mounted in cantilever fashion on mask body (1,2) of Simpson et al. is positioned substantially opposite a wearer's mouth (fig.1).

As to claim 60, the orifice (16) of Simpson et al. does not wholly correspond to the shape of the seal surface inasmuch as the boundaries of the orifice are set at a distance within the seal surface.

As to claim 61, the valve cover of Shindel has an opening (13) that is disposed directly in the path of fluid flow when the free portion of the flexible flap is lifted from the seal surface during an exhalation.

As to claim 62, the opening (13) in the valve cover of Shindel is approximately parallel to the path traced by the second end of the flexible flap during its opening and closing.

As to claim 63, the valve cover of Simpson et al. as modified by Shindel and its opening direct exhaled fluid flow downwards when the mask is worn on a person (see fig.1 of Simpson et al.).

As to claim 64, the valve cover of Shindel includes fluid-impermeable sidewalls (11).

As to claim 65, the opening (13) in the valve cover of Shindel is at least the size of the orifice in the valve seat.

Claim 66 is substantially equivalent in scope to claim 33 and is included in Simpson et al. as modified by Shindel for the reasons set forth above with respect to claim 33.

As to claim 67, the valve cover of Shindel is secured to the valve seat by friction fit (11,15) to a wall (5,8) of the valve seat.

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5. Claims 37-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simpson et al. ('516) in view of Shindel ('227) as applied to claims 33-36, 50-56, 58, 60-67 above, and further in view of McKim ('618).

The difference between Simpson et al. as modified by Shindel and claim 37 is the flexible flap having a curved profile.

McKim teaches a valve flap having a fixed portion (14a) and a free portion (opposite the fixed portion as illustrated in figs. 1 and 3), the one free portion of the flexible flap having a profile that comprises a curve when viewed from the front, which curve is cut to correspond to the general shape of the seal surface. McKim teaches a curved seal surface and curved flexible flap for the purpose of seating quickly, effectively and without float or bounce after each opening (col. 1, lines 64-72).

It would have been obvious to further modify flexible valve flap and seat of Simpson et al. (fig. 2) to make it curved because it would have provided quick seating, in an effective manner and without float or bounce after each opening as taught by McKim.

As to claims 38-39, the flap (15) of Simpson et al. is disclosed as being made from plastic and/or rubber. The physical characteristics of plastic and rubber include elasticity. Consequently, the particular material from which the valve flaps of Simpson et al. are made can be arrived at through mere routine obvious experimentation and observation with no criticality seen in any particular elasticity of such a material. One of ordinary skill would recognize the need for routine experimentation and observation in an effort to arrive at a range of elasticities of such valve flaps



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which would be open and close responsive to a wearer's exhalation and cessation of exhalation in a manner which protects the wearer.

As to claims 40 and 41, the degree of seal between the valve flap and valve sealing surface of Simpson et al. can be arrived at through mere routine obvious experimentation and observation with no criticality seen in any particular degree of seal including one meeting the standards as set forth in 30CFR 11.183-2, July 01, 1991. Further, it stands to reason that one of ordinary skill would strive to make a face mask in accordance with at least minimum current government standards of operation and including a stress relaxation sufficient to keep the flexible flap in an abutting relationship to the seal surface under any static orientation for 24 hrs. at 70 degrees centigrade.

As to claims 42-46,48,49, the particular dimensions, the particular material including the hardness of the material of the flexible flap (15) of Simpson et al. can be arrived at through mere routine obvious experimentation and observation with no criticality seen in any particular dimensions nor in any particular constituency. One of ordinary skill would recognize the need for experimentation and observation of physical characteristics and parameters in the development of the flexible flap because it would have to have those physical parameters which would cause it to be responsive to a wearer's exhalation in a manner which would also protect the wearer.

As to claim 47, the one free portion of the flexible flap (see fig.3 of McKim) of Simpson et al. as further modified by McKim has a profile that comprises a curve when viewed from the front, which curve is cut to correspond to the general shape of the seal surface.

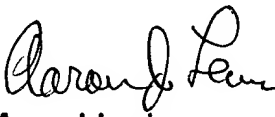
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***Response to Arguments***

6. Applicant's arguments with respect to claims 33-58,60-67 have been considered but are moot in view of the new ground(s) of rejection.
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron J. Lewis whose telephone number is (703) 308-0716.

Aaron J. Lewis

May 1, 2002

  
**Aaron J. Lewis**  
**Primary Examiner**